UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
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Instruction Memorandum No. OR-2003-041
Expires: 9/30/2004

To: Deputy State Directors, District Managers, Branch and Staff Chiefs

From: Associate State Director

Subject: Wilderness Study Area Spatial Data Standard

Program Area: Wilderness Management

Purpose: This Instruction Memorandum establishes spatial data standards for wilderness study areas. The data standard defines how this type of data is to be captured in a geographic information system (GIS), defines attributes used, and defines coding schemes used. The standard also establishes procedures for data updates and quality control. Included is the procedure to be used to convert data stored in this standard format to the BLM national wilderness study area standard.

Policy/Action: This data standard is to be followed for all wilderness study areas. This data set is maintained as a statewide coverage. Any changes or corrections are to be directed to the State Data Steward for approval and action (refer to the standard for details).

Timeframe: This data standard is effective immediately.

Background: A draft data standard was circulated for review (Information Bulletin OR-2002-197) by State and Field Office program and GIS specialists. No comments were received during this review period. A national standard for wilderness study areas has been issued (Instruction Memorandum 2003-021). Some minor modifications to the OR/WA standard have been made since the draft to accommodate the national standard. In addition, a guide for converting OR/WA data to the national standard is included.

Manual/Handbook Sections Affected: None

Coordination: This standard has been coordinated with wilderness specialists and GIS specialists in Oregon/Washington. The national data standard for wilderness study areas has been reviewed and adjustments made to conform with that standard to the extent possible.

Contacts: Dave Harmon, State Data Steward for Wilderness (503-808-6062)
Stan Frazier, State Data Administrator (503-808-6009)
Pam Keller, GIS Technical Support (541-573-4486)

Districts with Unions are reminded to notify their unions of this IM and satisfy any bargaining obligations before implementation. Your servicing Human Resources Office or Labor Relations Specialist can provide you assistance in this matter.

Signed by
Charles E. Wassinger

Authenticated by
Mary O'Leary
Management Assistant

Attachment
Wilderness Study Areas Spatial Data Standard (8 pp)

Distribution
WO-172 (Jarvis)
WO-560 (Horan)

Wilderness Study Areas Spatial Data Standard

Version: Final
Date: 12/10/2002

Standard Name: WILDERNESS STUDY AREAS
Standard Abbreviation: WSA
Date Created: 12/10/2001

Layer Description

Wilderness Study Area (WSA) boundaries as inventoried in the mid-1980's and defined in the October 1991 "Wilderness Study Report". WSA's are essentially roadless areas under BLM jurisdiction. WSAs have special management restrictions and priorities.

FOIA Category - Public

State Data Steward

Dave Harmon
Oregon State Office
503-808-6062

DATA COLLECTION AND MAINTENANCE PROTOCOLS

Accuracy Requirements: A high level of positional and attribute accuracy is required for the WSA theme. Much of BLM's management hinges on accurate boundaries for their special management areas, especially WSAs. Boundary features are input and maintained with the highest level of accuracy possible short of surveying.

Collection and Input Protocols: WSAs were inventoried in the late 1970's and early 1980's and no large scale re-inventory of WSAs is expected in the future. Additional WSAs could be designated in the future using new inventory and study guidelines. Existing WSAs are essentially static data until Congress passes legislation designating WSAs as wilderness or releasing them from further wilderness consideration. There is no established deadline for Congressional action on wilderness recommendations. WSA boundaries were manuscripted onto USGS 7.5 minute quads. The lines were annotated with their associated source feature (e.g. "PARCEL" or "RIDGELINE"). Boundaries were captured in GIS using these reference maps and the most accurate GIS themes available (GCDB for parcel segments; 24K DLG for roads and streams; DRG backdrop for heads-up digitizing of contours, fences, powerlines; DOQ backdrop for disturbances like mines). The Wilderness Study Report was also used as a reference for boundary descriptions as well as the draft report which has slightly larger scale maps than the final. Polygons and arcs were attributed according to the reference maps and documents. Many boundaries follow road *disturbance* rather than road centerline. Where a road right-of-way is defined, this is used as the boundary. Most roads had no defined right-of-way and so an assumed disturbance of 10 feet from center was used. Road segments from the GIS layer were buffered in ARC to the disturbance radius and the inside buffer line used for the WSA boundary.

Update Transactions and Frequency: The unit of processing for the WSA theme is the full theme . Updates should be rare and fall into one of three scenarios:

1. New localized inventory. Boundaries should be manuscripted onto 7.5 minute quads using the same process as original inventory.
2. Replacement of boundary linework when more accurate GIS themes become available.
3. Congressional wilderness legislation which designates wilderness areas from WSAs, or release WSAs from future wilderness consideration.

QUALITY ASSURANCE

Because the WSA theme is relatively static data, the main quality assurance work has been completed. Any changes to the WSA theme need to be directed through the State Data Steward for approval. District WSA Stewards should make changes on a *copy* of the corporate WSA theme and send to the State Data Steward (who will be responsible for the actual update to the corporate theme). Regular review of the WSA theme is not needed since there will be close review at the time of any change.

It will be the responsibility of the State Data Steward to provide Oregon's WSA theme to the Washington Office (Denver) in the proper format for inclusion in the national WSA theme.

DATA ORGANIZATION/STRUCTURE

The coverage contains a polygon component and an arc component. The polygon component (WSA Polygons) contains information about the wilderness study area (identifier, name, suitability recommendation) while the arc component (WSA Boundary Lines) contains information about the source of the linework that creates the polygons.

WSA BOUNDARY LINES (wsa.aat)

Attribute List

Name	Code	Type
BOUNDARY COORDINATE SOURCE CD	WSA_COORD_SOURCE	A20
BOUNDARY DEFINING FEATURE CD	WSA_DEF_FEATURE	A30

BOUNDARY COORDINATE SOURCE CD (WSA_COORD_SOURCE)

Description

[Required]
The source (in general terms) of the boundary linework.

Codes

Allowable Codes for the Source of Coordinates (Linework):

GCDB = linework snapped to geographic coordinate database points
DOQ = linework snapped to digital orthoquad data
24K DLG = linework from 24K digital line graph data (such as streams and roads)
24K DRG = linework from digitizing USGS 24K digital raster graphs (topo maps)

BOUNDARY DEFINING FEATURE (WSA_DEF_FEATURE)

Description

[Required]
The type of physical feature that defines the boundary line segment.

Codes

Allowable Codes for Boundary Defining Physical Feature:
ROAD = A road forms the boundary for this line segment.
ROADBUFFER10 = The boundary is a buffer line 10 feet in from a road.
ROADBUFFER30 = The boundary is a buffer line 30 feet in from a road.
ROADBUFFER50 = The boundary is a buffer line 50 feet in from a road.
ROADBUFFER100 = The boundary is a buffer line 100 feet in from a road.
ROADBUFFER300 = The boundary is a buffer line 300 feet in from a road.
RIGHT-OF-WAY = A legal road right of way forms the boundary for this line segment.
RIM = A rim forms the boundary for this line segment.
CONTOURXXXX = A contour line forms the boundary for this line segment. The "XXXX" is the contour elevation in feet (contour 2200 = a contour line at 2200 feet in elevation).
TRAIL = A trail forms the boundary for this line segment.
FENCE = A fence forms the boundary for this line segment.
RIDGE = A ridge forms the boundary for this line segment.
STREAM = A stream forms the boundary for this line segment.
POWERLINE = A powerline forms the boundary for this line segment.
SUBDIVISION = A GCDB based boundary.
EDGE-OF-LAVA = The edge of a lava flow forms the boundary for this line segment.
MEANDER-LINE = A lake meander line (when not defined by GCDB) forms the boundary for this line segment.
MEDIAL-LINE = A lake medial line forms the boundary for this line segment.DRAINAGE = A drainage forms the boundary for this line segment.
LAVA&SEEDING = The boundary follows the edge of lava and a seeding.

EDGE-OF-MINE = The boundary follows the edge of a mine.
PT-TO-PT = Boundary segment not defined by any specific feature, simply manuscripted as a point to point line on the reference map.
UNKNOWN = Boundary is of unknown origin.

WSA POLYGONS (wsa.pat)

Attribute List

Name	Code	Type
WILDERNESS STUDY AREA NO	SUBJ_WSA	A10
WILDERNESS SUITABILITY CODE	RSWD	A1
WILDERNESS STUDY AREA NAME	WSA_NAME	A50

WILDERNESS STUDY AREA NO (SUBJ_WSA)

Description

[Required]
A unique identifier for each wilderness study area. These identifiers are unique within each BLM administrative state. This attribute also provides information about areas within a WSA that are not part of the wilderness study area for some reason. Possible reason may include roads that have been excluded (cherry-stemmed), private lands, other lands that do not exhibit wilderness characteristics.

Codes

The unique WSA identifier (subj_wsa) and it's corresponding name. Non-WSA lands do not have a name (OUT, ROADOUT). PRIVATE lands are labeled as “inholding”.

subj_wsa	wsa_name
1-101	Abert Rim
2-103	Aldrich Mountain
2-74	Alvord Desert
5-21	Badlands
2-84	Basque Hills
3-27	Beaver Dam Creek
2-86E	Blitzen River
3-73	Blue Canyon
3-118	Bowden Hills
2-87	Bridge Creek
3-31	Camp Creek
3-18	Castle Rock
3-47	Cedar Mountain
13-2	Chopaka Mountain
3-120	Clarks Butte
3-32	Cottonwood Creek
5-43	Cougar Well
1-2	Devil Garden Lava Bed
1-58	Diablo Mountain
3-153	Disaster Peak
3-53	Dry Creek
3-56	Dry Creek Buttes
2-73A	East Alvord

3-156	Fifteen Mile Creek
1-117	Fish Creek Rim
1-22	Four Craters Lava Bed
5-35	Gerry Mountain
3-33	Gold Creek
1-132	Guano Creek
5-42	Hampton Butte
1-146A	Hawk Mountain
2-72F	Heath Lake
2-85F	High Steens
2-85H	Home Creek
6-2	Homestead
3-77A	Honeycombs
3-128	Jordan Craters
3-194	Lookout Butte
5-6	Lower John Day
3-110	Lower Owyhee Canyon
2-23M	Lower Stonehouse
1-24	Lost Forest ISA
2-77	Mahogany Ridge
2-14	Malheur-Bluebucket
6-1	Mcgraw Creek
11-1	Mountain Lakes
5-31	North Fork
5-8	North Pole Ridge
3-157	Oregon Canyon
1-78	Orejana Canyon
3-59	Owyhee Breaks
3-195	Owyhee Canyon
3-114	Palomino Hills
5-85	Pats Cabin
2-81	Pueblo Mountains
2-78	Red Mountain
2-82	Rincon
5-34	Sand Hollow
2-85G	S.Fk Donner Blitzen
3-111	Saddle Butte
1-146B	Sage Hen Hills
1-24	Sand Dunes
6-3	Sheep Mountain
2-72C	Sheepshead Mountains
3-75	Slocum Creek
11-17	Soda Mountain
5-33	South Fork
1-139	Spaulding
3-35	Sperry Creek
5-9	Spring Basin
1-3	Squaw Ridge Lava Bed

5-14	Steelhead Falls
2-23L	Stonehouse
2-98A	Strawberry Mountains
2-98C	Strawberry Mountains
2-98D	Strawberry Mountains
5-84	Sutton Mountain
2-72I	Table Mountain
5-1	Thirtymile
3-162	Twelve Mile Creek
3-74	Upper Leslie Gulch
3-173	Upper W. Little Owyhee
2-72J	West Peak
3-77B	Wild Horse Basin
2-72D	Wildcat Canyon
3-152	Willow Creek
2-73H	Winter Range
FS5-31	NORTH FORK (Forest Service WSA that BLM has an interest in)
FS6321	DESCHUTES CANYON (Forest Service WSA that BLM has an interest in)
OUT	Non-WSA islands within WSA polygons and that are not private.
ROADOUT	Cherry-stemmed road buffers, not in WSA, but surrounded by WSA.
PRIVATE	Inholding - Private inholding islands surrounded by WSA.

WILDERNESS SUITABILITY CODE (RSWD)

Description

[Required]
Identifies whether the wilderness study area is recommended suitable for wilderness designation.

Codes

Allowable Codes:
Y = recommended suitable
N = not recommended suitable
X = Used for "OUT" areas where it is not applicable to say Y or N. Note that there are some "OUT" , "ROADOUT" and "PRIVATE" areas that are, in fact, recommended for wilderness (i.e. Roads recommended for closure, private lands recommended for acquisition).
U = No determination of suitability made.

WILDERNESS STUDY AREA NAME (WSA_NAME)

Description

[Required]
The name used to identify the wilderness study area. Non-WSA lands are not attributed with a name, but inholdings (SUBJ_WSA = 'PRIVATE') are labeled with "inholding".

Codes

See Wilderness Study Area Number (subj_wsa) for a list of allowable WSA names.

December 9, 2002

Conversion of Oregon Standard Wilderness Study Area (WSA) to National Standard Format.

The following attribute changes need to be made:

(in Arc)
additem WSA_NUMBER 20 C
additem WSA_SUITABILITY 1 I
additem WSA_STATE 2 C

(in INFO)
Fill WSA_STATE with "OR"
Fill WSA_SUITABILITY with:
1 for RSWD = "Y"
2 for RSWD = "N"
3 for RSWD = "U"
0 for RSWD = "X"
res WSA_NAME **cn** "WSA"
concatenate WSA_NUMBER **from** "OR-", SUBJ_WSA

(in Arc)
pullitems ORWSA**.pat** ORWSA**.pat**
AREA, PERIMETER, ORWSA#, ORWSA-ID, WSA_NUMBER, WSA_SUITABILITY, WSA_NAME, WSA_STATE

The national standard has a region feature class that the Oregon standard does not. Regions add considerable complexity to a layer and Oregon considered it important to keep this layer as simple as possible since it is used in combination with many other layers in complex analyses.
Here are the steps: (in Arc)

polyregion ORWSA ORWSA-STD TEMP
(TEMP is interim subclass name)

regiondissolve ORWSA-STD ORWSA-STD WSA WSA_NAME
(dissolve on WSA_NAME and create subclass WSA)

joinitem ORWSA-STD.**patWSA** ORWSA.**pat** ORWSA.**patWSA** WSA_NAME
(join the rest of the polygon attributes to the regions)

pullitems ORWSA-STD.**patWSA** ORWSA-STD.**patWSA**
AREA, PERIMETER, WSA#, WSA-ID, WSA_NUMBER,WSA_NAME,WSA_STATE
(keep only the standard attributes for the region subclass)

dropfeatures ORWSA-STD **region.**TEMP
(drop the interim subclass)

No changes are needed in the **.aat** (line feature table) although is should be noted that the DEF_FEATURE and COORD_SOURCE are not completely filled in yet. Also note that the acceptable values for DEF_FEATURE and COORD_SOURCE are not clearly identified in the national standard. The values used in the OR/WA layers are standard accepted terminology from the wilderness program.